
FLAP DESIGN FOR MINOR ORAL SURGERY.

DR. AHMAD MUSTAFA AL-TARAWNEH
OMFS

STAGES OF OPERATION

- Retraction
- **Incision**
- Reflection
- Bone removal
 - access
 - point of elevation
 - removal of obstruction
- Tooth section
- Delivery
- Clean-up
- Sew-up
- Check-up
- Follow-up
- Write-up

PRINCIPLES OF FLAP DESIGN

- **Local flap**
 1. outlined by a **surgical incision**
 2. carries its own **blood supply**
 3. allows surgical **access** to underlying tissues
 4. can be replaced in the **original position**
 5. can be maintained with **sutures** and is expected to **heal**
- ✓ Used in oral **surgical, periodontic, and endodontic** procedures to gain access.

PRINCIPLES OF FLAP DESIGN

- **Complications**
 - A. **Flap necrosis**
 - B. **Flap Dehiscence**
 - C. **Flap Tearing**
 - D. **Injury to Local Structures**

A. Flap necrosis

1. **Base > Free margin**

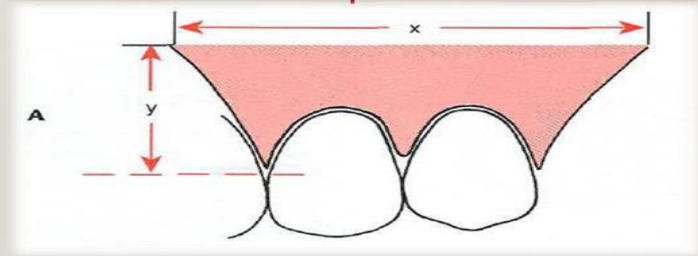
- to preserve an adequate blood supply
- unless a major artery is present in the base

2. **Width of Base > Length of Flap*2**

- less critical in oral cavity, but length < width
- a long, straight incision with adequate flap reflection heals more rapidly than a short, torn incision.

3. An **axial blood supply in the base**

4. Hold the flap with a retractor resting on intact bone to prevent tension.



A. Flap Dehiscence

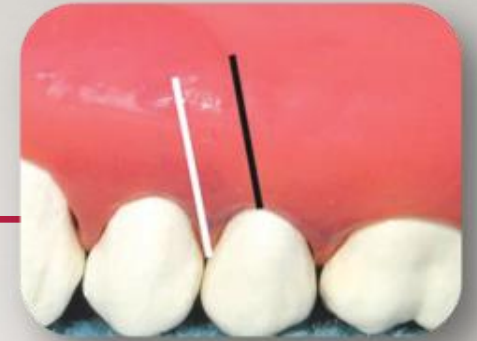
1. The incisions must be made over **intact bone**
2. If the pathologic condition has eroded the buccocortical plate, the incision must be at least **6 or 8 mm away from it**.
3. The incision is **6 to 8 mm away from the bony defect** created by surgery.
4. Gently handle the flap's edges
5. Do not place the flap under tension
6. Do not cross bony prominences, ex: **canine eminence**



PRINCIPLES OF FLAP DESIGN



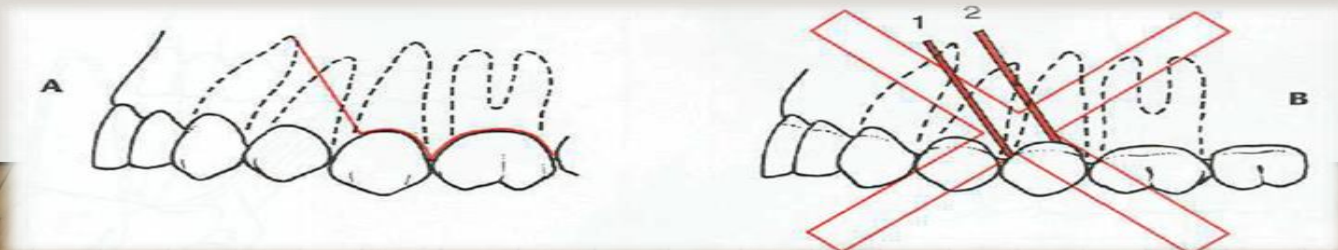
FLAP TEARING



- **Envelope flaps**
 - an incision around the necks of several teeth.
 - extends **2 teeth anterior and 1 tooth posterior.**

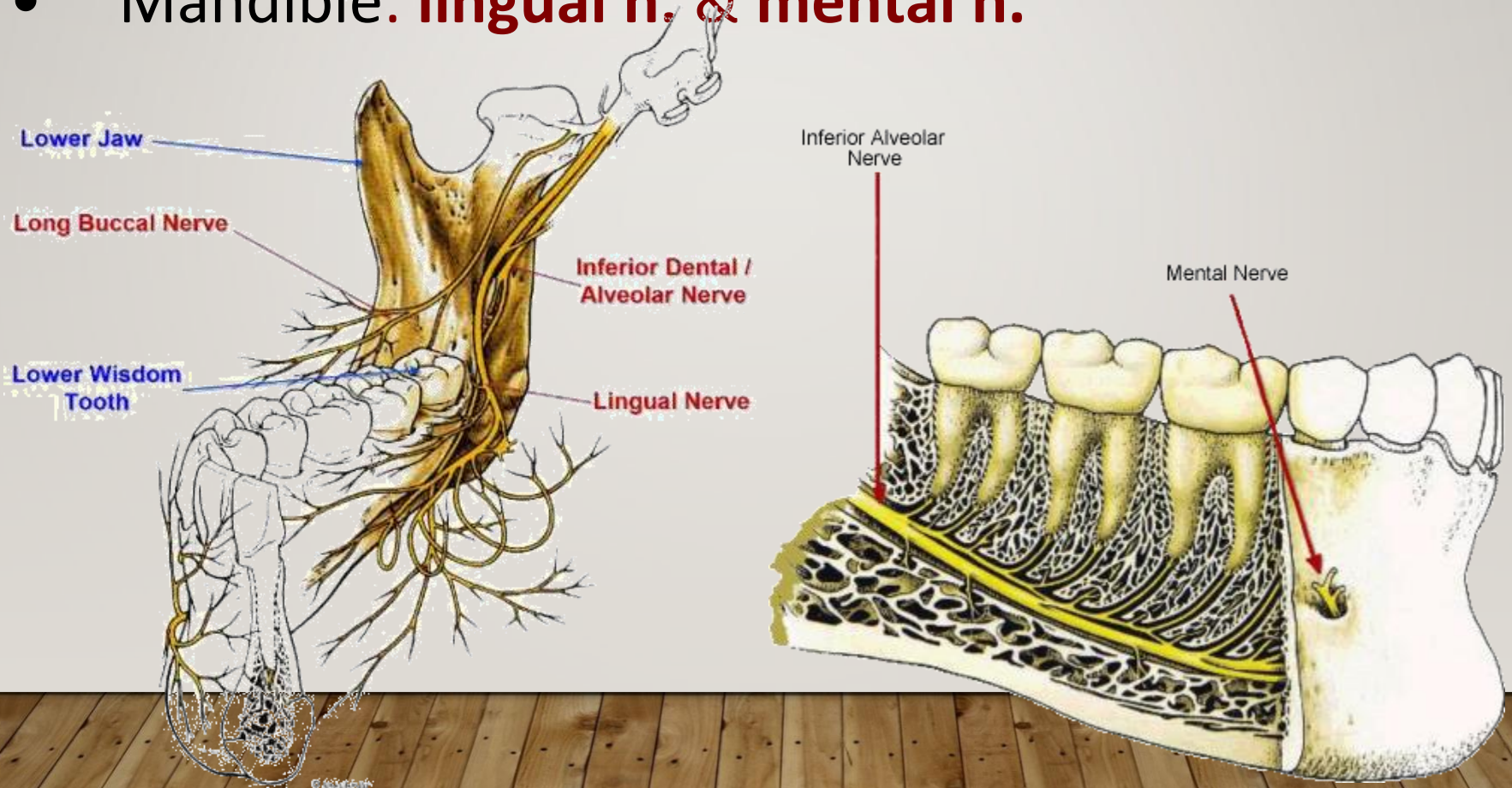
If not provide sufficient access...

- **Vertical (oblique) releasing incisions:**
 - extends **1 tooth anterior and 1 tooth posterior.**
 - started at the line angle of a tooth.
 - carried obliquely apically into the unattached gingiva.
 - If cross the papilla → localized periodontal problems



D INJURY TO LOCAL STRUCTURES

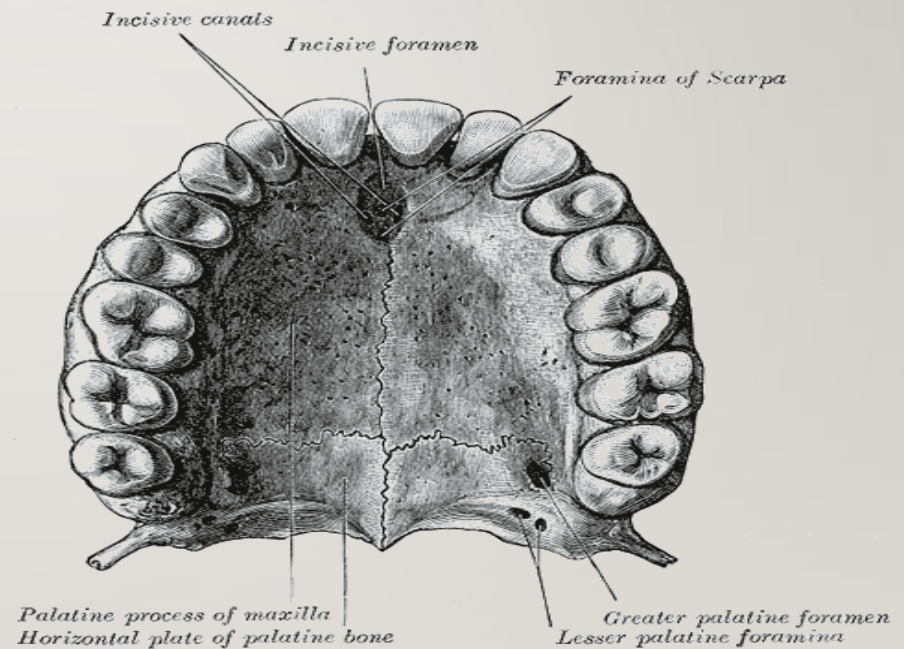
- Mandible: **lingual n. & mental n.**



PRINCIPLES OF FLAP DESIGN

D. Injury to Local Structures

- Maxilla: **greater palatine a. & nasopalatine n./a.**



PRINCIPLES OF FLAP DESIGN

Summary

Table 2-5. Flap Design Considerations

Avoid	Result if not avoided
Incision over bony prominences	Tension, dehiscence, and delayed healing
Incising through papillae	Dehiscence, periodontal defect
Incision over facial aspect midcrown	Dehiscence, periodontal defect
Incision not placed over sound bone	Collapse and delayed healing
Vertical incision in area of mental foramen	Injury to the mental nerve
Lingual releasing incision in the posterior mandible	Injury to lingual nerve
Vertical releasing incision in the posterior palate	Bleeding, injury to the greater palatine artery or vein

TYPES OF MUCOPERIOSTEAL FLAPS

1. Envelope/sulcular incision
2. Envelope with one releasing incision (three-corner flap)
3. Envelope with two releasing incisions (four-corner flap)
4. Semilunar incision
5. Y-incision
6. Pedicle flap

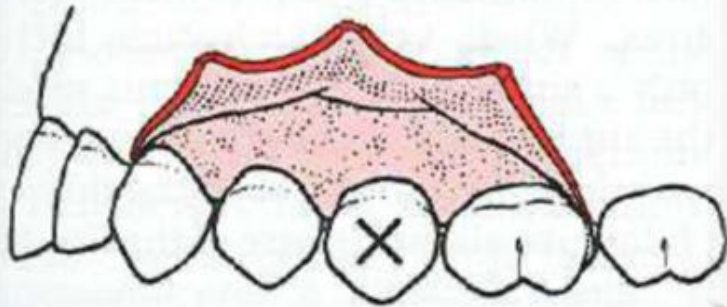


Full-thickness
mucoperiosteal
flap

TYPES OF MUCOPERIOSTEAL FLAPS

1. Envelope/Sulcular flap

2 teeth anterior
1 tooth posterior

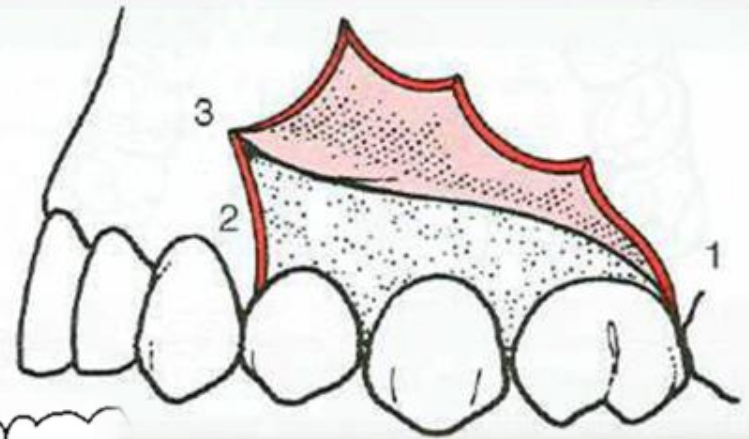


Edentulous:
at the crest of the ridge →
removal of a **mandibular torus**

TYPES OF MUCOPERIOSTEAL FLAPS

2. Three-corner flap

1 tooth anterior
1 tooth posterior



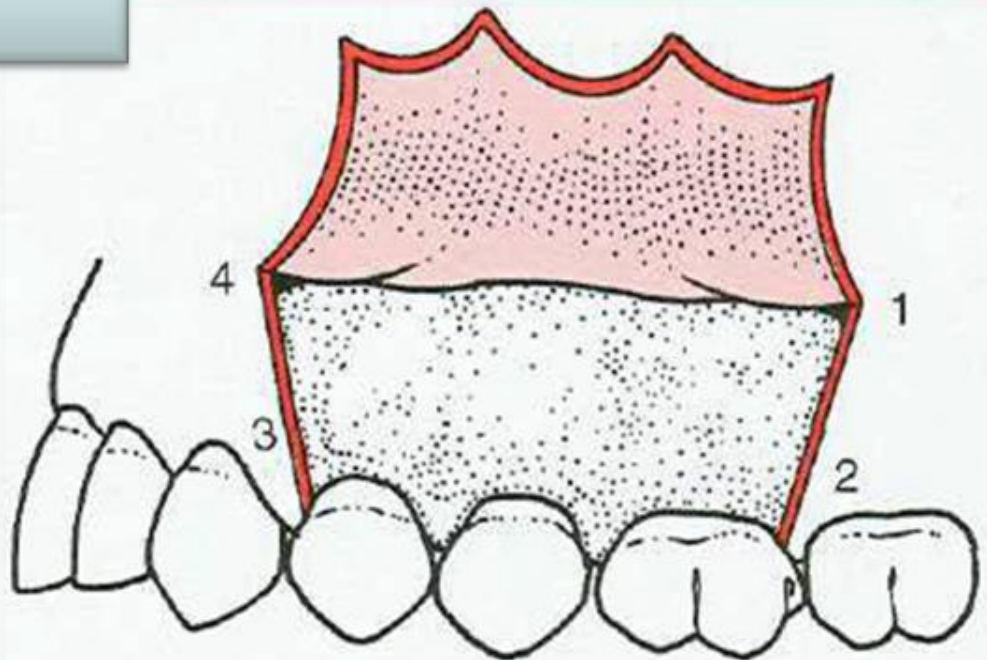
✓ **Greater access** in an **apical** direction, especially in the posterior aspect of the mouth

TYPES OF MUCOPERIOSTEAL FLAPS

3. Four-corner flap

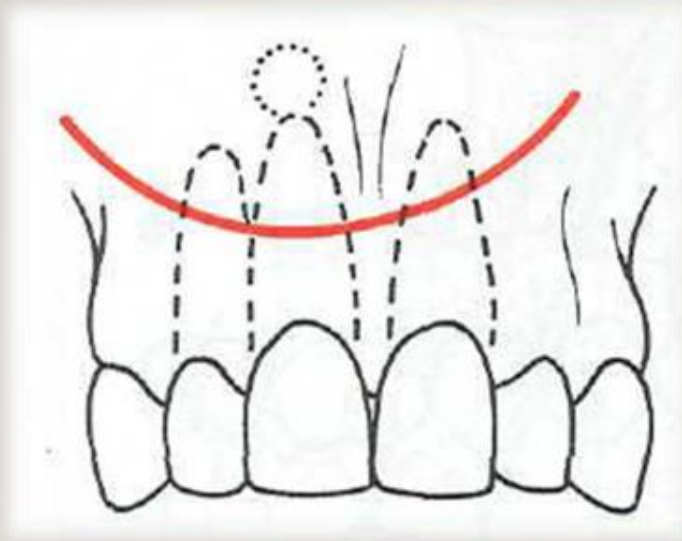
1 tooth anterior
1 tooth posterior

✓ rarely indicated



TYPES OF MUCOPERIOSTEAL FLAPS

4. Semilunar incision

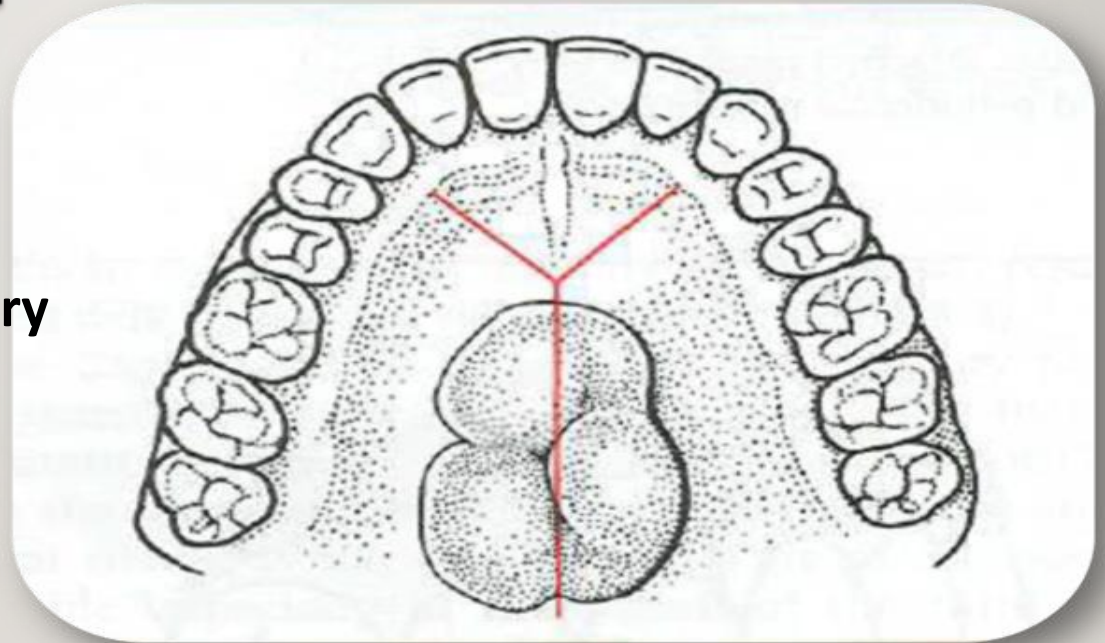


- ✓ to approach the **root apex**
- ✓ avoids trauma to the papillae and gingival margin
- ✓ useful for **periapical surgery** of a limited extent.
- ✓ should not cross major prominences, ex: canine eminence

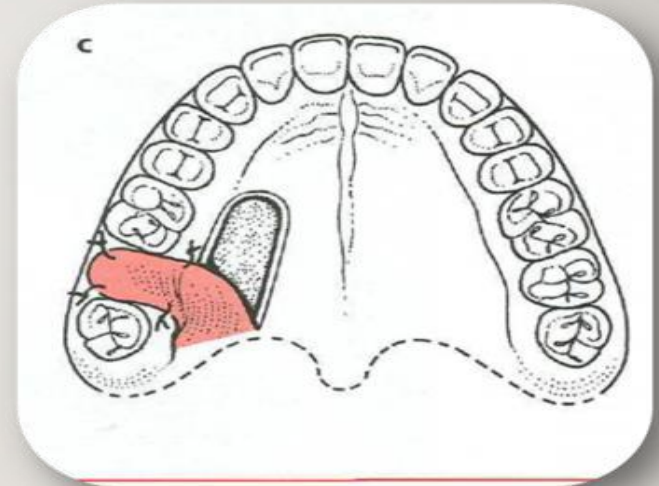
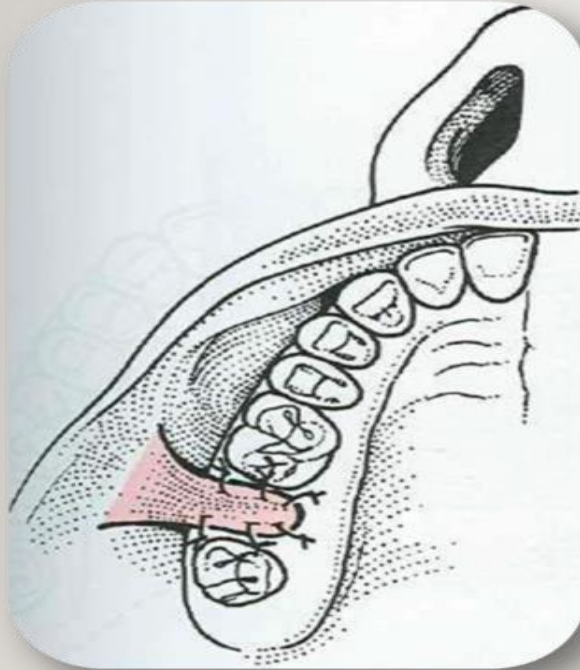
TYPES OF MUCOPERIOSTEAL FLAPS

5. Y-incision

✓ removal of a **maxillary palatal torus**



TYPES OF MUCOPERIOSTEAL FLAPS



6. Pedicle flap

- ✓ closure of oroantral communications
- ✓ mobilizes from one area and then rotates to fill a soft tissue defect in another area.



Thank
You